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Doc. ID: ZTZN-0101-1
Released: Dec. 24, 2001

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CHROME SYSTEMS: AUTOTRANSMISSION
AN XML-BASED AUTOMOBILE CONFIGURATION FORMAT

August, 2001

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Abstract

Many XML formats have been created in attempts to standardize various industries (over 500 by ZapThink's latest count), but none have squarely addressed the needs for configuration and "order option rules" for the automotive industry. As such, Chrome Systems, a leader in automotive configuration software has created and released AutoTransmission, an XML format for specifying rules for ordering configurable automotive components. While specific to the automotive industry, much can be learned from how Chrome Systems has approached this specific need, and many of the elements may be applicable to other similar industries.

Standardizing Automobile Configuration

On May 23, 2001, **Chrome Systems** released an XML specification focused on providing a common format for the interchange of configuration information for the automobile industry. While suitable for other needs, the primary intended audience for the **AutoTransmission** format is for automobile manufacturers and owners of vehicle fleets.

AutoTransmission is geared at solving the challenge of specifying and communicating the various automobile configuration options prior to an order being transmitted to the vehicle manufacturer. While configuration software has existed in the industry for decades, each vehicle manufacturer has a different format for the specification of the various valid configuration options and dependencies on each make and model of vehicle. These configuration options are known as Option Order Rules. For example, a certain engine type may require a particular transmission type, or a horsepower requirement may impact towing capacity.

Currently, a major challenge in the auto industry is providing accurate configuration information to vehicle fleet purchasers. Fleet purchasers range from auto rental establishments such as Avis and Budget to corporate fleets such as Coca-Cola. In each of these cases, a purchaser is ordering a large quantity of vehicles in different configurations for particular needs. Cost savings can be dramatic for accurate configuration. For example, if Coca-Cola wishes to solicit bids from auto manufacturers for an order of 2,000 trucks in a particular configuration, a price difference of only $500 per vehicle can make a substantial difference in overall bid cost. Therefore, communicating accurate configuration information is of utmost importance at all points on the value chain.

Previous Methods for Auto Configuration

Prior to the specification of this electronic format, most configuration information was supplied to purchasers by means of paper-based documents that varied widely between vehicle makes. In the words of Dave Thompson, “Fleet companies get their ordering information from these paper guides and then manually enter the specifications into their proprietary legacy systems, which are their own ‘mini-configurators’. They must do this over and over, every year, for every manufacturer”. Not only do methods for specifying configuration vary, but also terminology for similar items differs between vehicle makes. For example, what may be referred to as a “cruise control” in one make is described as “speed control” in another. Configuring vehicles across multiple makes can become a frustrating and inaccurate process as a result.

To this end, Chrome Systems, a "provider of automotive data, configuration technology and commerce solutions", created the AutoTransmission format. This effort should not be confused with the Covisint project, which is a marketplace for the buying and selling of automotive parts and components. The format specifies a neutral mechanism for the specification of cross-manufacturer and cross-make configuration rules. The standard format defines the way that order rules and their associated data flows are specified for different makes, models, and years. AutoTransmission is then implemented by the purchasing company using adapters to existing "legacy systems" and an XML translator. Chrome is leveraging its over 15 years of experience in automobile configuration and data improvement and providing their expertise in this XML format, which will be released to the public for comment and contribution later in this year. The Chrome product has an API that is used for creating configurations, and can accept feeds in the AutoTransmission format. These are then converted into Java objects for use by the application.

Preliminary Implementations

Although the standard is not currently available for view by the public, Chrome has succeeded in gaining an initial major implementation by **General Motors**. Chrome provides the North American ordering system for General Motors and its 8,300 dealers, and it has implemented AutoTransmission as the format for specifying vehicle configuration options. GM sees the AutoTransmission format as an answer to its configuration challenges, namely the need for more accurate configuration information from customers and an easier-to-integrate format with purchaser back-end systems.

Even though GM has so far been the only major vehicle manufacturer to adopt the AutoTransmission format, 14 out of 17 largest fleet purchasers currently use Chrome products, and Chrome's automotive dealer clients account for more than half of all new vehicles sold in the U.S. in 2000. Combined with the competitive pressure resulting from the GM adoption of the configuration standard, these factors contribute to its possible adoption by other manufacturers and buyers. Of course, its true test as a "standard" is its ability to gain adoption at the other manufacturers and buyers that are not using Chrome products or services.

So far, the standard is at a fairly early stage. Right now, the existing fleet companies are at the very beginning stages of testing and implementation of the standard, and it is not being used in a production manner quite yet. Also, while AutoTransmission is being classified by Chrome as an "open standard", it has yet to meet the true tests of openness: public release, public comment, and an "open process" that involves companies other than Chrome as part of the management process.

Product and Standard Competition

AutoTransmission overlaps in some ways with the more general configuration specifications and products from general-purpose configuration vendors such as Trilogy and Selectica. Other possible points of convergence include other industries with configuration rule definition needs such as insurance, online portals, and financial services. Perhaps as part of their quest for "openness", these vendors can become involved in the development and maintenance of the AutoTransmission specification. As a result, the specification may need to be renamed if it is to gain a wider audience and acceptance. The AutoTransmission format is currently DTD based, but will take advantage of XML Schema and leverage the BizTalk framework in the near future.

The specification seems to be very well focused for the problem at hand, but care should be taken to make sure that the specification is developed in an "open process". It is necessary for standards such as these to be delivered as non-proprietary, single-vendor formats, rather than as standards simply distributed to the public with central schema design controlled by a

single organization. Chrome seems interested in pursuing an open-process approach, and it is likely they will succeed.

Key Conclusions & Recommendations

- Companies investigating creation or adoption of a format for definition and exchange of automobile or fleet configuration information should consider AutoTransmission at least as a starting point.
- Chrome Systems should seek maximum interoperability and compliance with existing B2B exchange formats such as ebXML and RosettaNet.

Profile: Chrome Systems (August, 2001)
Specification Released: May 23, 2001
Participants: Chrome Systems
CEO / President / Owner: Bob Navarre
XML Specification:
- AutoTransmission: Automobile configuration exchange

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Related Research

- *Service-Oriented Integration* Report (ZTR-WS103)
- *RosettaNet* ZapNote (ZTZN-0100)

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About ZapThink, LLC

ZapThink is an IT market intelligence firm that provides trusted advice and critical insight into XML, Web Services, and Service Orientation. We provide our target audience of IT vendors, service providers and end-users a clear roadmap for standards-based, loosely coupled distributed computing – a vision of IT meeting the needs of the agile business.

ZapThink's role is to help companies understand these IT products and services in the context of SOAs and the vision of Service Orientation. ZapThink provides market intelligence to IT vendors who offer XML and Web Services-based products to help them understand their competitive landscape and how to communicate their value proposition to their customers within the context of Service Orientation, and lay out their product roadmaps for the coming wave of Service Orientation. ZapThink also provides implementation intelligence to IT users who are seeking guidance and clarity into how to assemble the available products and services into a coherent roadmap to Service Orientation. Finally, ZapThink provides demand intelligence to IT vendors and service providers who must understand the needs of IT users as they follow the roadmap to Service Orientation.

ZapThink's senior analysts are widely regarded as the "go to analysts" for XML, Web Services, and SOAs by vendors, end-users, and the press. They are in great demand as speakers, and have presented at conferences and industry events around the world. They are among the most quoted industry analysts in the IT industry.

ZapThink was founded in October 2000 and is headquartered in Waltham, Massachusetts. Its customers include Global 1000 firms, public sector organizations around the world, and many emerging businesses. ZapThink Analysts have years of experience in IT as well as research and analysis. Its analysts have previously been with such firms as IDC and ChannelWave, and have sat on the working group committees for standards bodies such as RosettaNet, UDDI, CPExchange, ebXML, EIDX, and CompTIA.

Call, email, or visit the ZapThink Web site to learn more about how ZapThink can help you to better understand how XML and Web Services impact your business or organization.

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